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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,185	07/14/2006	Shouichi Nakao	65341.00009	2822
32294 7590 10/10/2008 SQUIRE, SANDERS & DEMPSEY L.L.P. 8000 TOWERS CRESCENT DRIVE 14TH FLOOR VIENNA, VA 22182-6212				
EXAMINER BINDA, GREGORY JOHN				
ART UNIT 3679		PAPER NUMBER		
MAIL DATE 10/10/2008		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/586,185

**Applicant(s)**

NAKAO ET AL.

**Examiner**

Greg Binda

**Art Unit**

3679

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_

*Information Disclosure Statement*

1. The information disclosure statement filed August 25, 2008 fails to comply with the provisions of 37 CFR 1.98(b) because the references titled "Japanese Office Action" are not identified with a publication date. The mail date of letter from one party (the Japanese Patent Office) to a second party (applicant) is not publication date. The references have been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.04(a) ¶ I.

*Drawings*

2. The drawings are objected to because:
- a. In Fig. 1 the lead line for reference numeral 22 fails to lead to the inner member
  - b. Fig. 24 should be labeled as prior art.
  - c. Reference character T2 is used to indicate one offset distance in Fig. 2 and a different offset distance in Fig. 6 as well as the corresponding sections in the description.
  - d. The diameter of the ball 28 is indicated by the reference character N in Figs. 2, 4 & 22 and then by reference character Db in Figs. 14, 15 & 19 as well as the corresponding sections in the description.

- e. Reference character R is used to indicate a center of curvature in Fig. 2 and reused to identify a radius in Fig. 22 as well as the corresponding sections in the description.
  - f. Reference numerals 10+ are used in Fig. 20 to identify features and then reused to identify modifications of those features in Fig. 23.
3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

*Specification*

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

*Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 & 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Aucktor, US 3,706,323. Figs. 1-5 show a constant-velocity joint comprising:

an outer member 4 connected to one 9 of two shafts which are angularly movable relative to each other and having an inner circumferential surface having a plurality of first guide grooves 8 extending in an axial direction thereof, said outer member having an open end;

an inner ring 3 connected to the other 1 of said two shafts and having as many second guide grooves 7 as the number of said first guide grooves, said second guide grooves extending in an axial direction thereof;

a plurality of balls 10 rollingly disposed between said first guide grooves and said second guide grooves, for transmitting a torque between said outer member and said inner ring; and

a retainer 11 having retaining windows retaining said balls, respectively, therein,

wherein Fig. 5 shows each of said first guide grooves 8 has a transverse cross section extending perpendicularly to said axial direction and having a single arcuate shape, each of said first guide grooves being held in contact with a corresponding one of the balls at a single point 'a', and

wherein Fig. 2 shows each of said second guide grooves 7 has a transverse cross section extending perpendicularly to said axial direction and having elliptically arcuate shape, each of said second guide grooves being held in contact with a corresponding one of the balls at two points i1 & i2

7. Claim 8 is are rejected under 35 U.S.C. 102(b) as being anticipated by Miller et al, "Rzeppa Universal Joints" (hereinafter "Miller"). In Figs. 1 & 7, Miller shows a constant-velocity joint comprising:

an outer member (OUTER RACE) connected to one of two shafts which are angularly movable relative to each other and having an inner circumferential surface having a plurality of first guide grooves extending in an axial direction thereof, said outer member having an open end;

an inner ring (INNER RACE) connected to the other (SHAFT) of said two shafts and having as many second guide grooves as the number of said first guide grooves, said second guide grooves extending in an axial direction thereof;

six balls (BALLS) rollingly disposed between said first guide grooves and said second guide grooves, for transmitting a torque between said outer member and said inner ring; and

a retainer (CAGE) having retaining windows retaining said balls, respectively, therein,

wherein said first guide grooves have a pitch circle diameter represented as an outer PCD, said second guide grooves have a pitch circle diameter represented as an inner PCD. Fig. 10 shows BCR (ball center radius) which indicates that there is no difference between the outer and inner PCDs (i.e. "PCD clearance" is equal to zero).

8. Claims 8 & 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Thomas, US 2003/0054893. Figs. 1 & 3 show a constant-velocity joint comprising:

an outer member 12 connected to one 14 of two shafts which are angularly movable relative to each other and having an inside-diameter surface having a plurality of first guide grooves 16 extending in an axial direction thereof, said outer member having an open end;

an inner ring 20 connected to the other 22 of said two shafts and having as many second guide grooves 24 as the number of said first guide grooves, said second guide grooves extending in an axial direction thereof;

six balls 28 rollingly disposed between said first guide grooves and said second guide grooves, for transmitting a torque between said outer member and said inner ring; and

a retainer 30 having retaining windows 32 retaining said balls, respectively, therein,

wherein said first guide grooves have a pitch circle diameter represented as an outer PCD, said second guide grooves have a pitch circle diameter represented as an inner PCD, and a ratio (b/BCR) of a diameter (b) of said balls to a dimension (BCR) of an outer/inner PCD, which represents the outer PCD and the inner PCD that are equal (i.e. PCD clearance = zero) to each other, is disclosed as less than 0.3 at para. 0031.

*Claim Rejections - 35 USC § 103*

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 9-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller. Miller shows a constant velocity joint comprising all the elements recited in claims, but does not expressly disclose the particular range values recited in the claims. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the constant velocity joint include all the particular ranges values recited in the claims, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Kulling*, 897 F.2d 1147, 14 USPQ2d 1056.

11. Claims 2-7 & 9-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aucktor for the same reason noted above.

12. Claims 9-11 & 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas for the same reason noted above.



*Conclusion*

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Binda whose telephone number is (571) 272-7077. The examiner can normally be reached on M-F 9:30 am to 7:00 pm with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571) 272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Greg Binda/  
Primary Examiner  
Art Unit 3679